

Claims

1. A device for sampling of milk from an animal, the milk of which is to be tested, wherein the device comprises a collecting member (15, 15') arranged to receive milk samples from a milk line (1), which is arranged to transport milk from one animal (3) at a time and a passage (8a, 12'', 13) arranged to allow a milk flow from the milk line (1) to the collecting member (15, 15'), characterised in that the device comprises flow means (11, 19) arranged to provide a milk flow, from said animal (3), through at least a part of the passage (8a, 12'', 13) at least a time period before a milk sample is taken in order to rinse at least said part of the passage (8a, 12'', 13) from milk residues from a previously milked animal.
2. A device according to claim 1, characterised in that the milk line 1 comprises a collecting container (4, 4'), wherein the passage (8a, 12'', 13) is arranged to allow a milk flow from the collecting container (4, 4') to the collecting member (15, 15').
3. A device according to claim 1 or 2, characterised in that the device comprises a conduit loop (8), having a first end (9) connected to the milk line (1) and a second end (10) connected to the milk line (1) at a distance from the first end (8), wherein at least a first part of the conduit loop (8a), is comprised in said passage.
4. A device according to claim 3, characterised in that the first part of conduit loop (8a) has an extension from the first end (9) to a valve member (12), which is arranged to allow a discharge of the milk in the conduit loop (8) to the collecting member (15).
5. A device according to claim 4, characterised in that the valve member comprises a three-way valve (12).

6. A device according to claim 4 or 5, characterised in that the device comprises a second conduit (13) having an extension from the valve member (12) to the collecting member (15), which second conduit (13) constitutes a second part of the passage.

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7. A device according to claim 3, characterised in that the first part of conduit loop (8a) has an extension from the first end (9) of the conduit loop to a collecting member (15'), which is arranged in the conduit loop (8).

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8. A device according to claim 7, characterised in that the conduit loop (8) comprises a valve (27), which in a closed position is arranged to accomplish stagnant milk in the collecting member (15').

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9. A device according to claim 1 or 2, characterised in that the device comprises a valve (12') arranged in the milk line (1), wherein said passage comprises at least an opening (12'') of the valve (12').

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10. A device according to any one of the claims 3 to 9, characterised in that said flow means (11, 19) is arranged to provide said milk flow in at least said part of the passage as soon as milk from said animal (3) flows in the milk line (1) at the first end (9) of the conduit loop (8).

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11. A device according to any one of the preceding claims, characterised in that the flow means comprises a pump (11, 19)

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12. A device according to any one of the preceding claims, characterised in that the flow means comprises the gravitation.

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13. A device according to any one of the preceding claims, characterised in that the device comprises an analysing device (14), which is arranged to analyse the milk in the collecting member (15, 15').

14. A device according to claim 13, characterised in that the analysing device (14) is arranged to count somatic cells and/or fat droplets in the milk sample.
- 5 15. A device according to claim 14, characterised in that the analysing device (14) is arranged to add chemical substances to the collecting member (15) in order to count somatic cells or fat droplets in the milk sample.
- 10 16. A device according to claim 14, characterised in that the analysing device (14) is arranged to use a camera system (25) to record images of the milk sample in the collecting member (15) in order to count somatic cells and/or fat droplets.
- 15 17. A device according to any one of the preceding claims, characterised in that the device comprises a control unit (17) arranged to control the milk sampling process.
- 20 18. A device according to claim 17, characterised in that the control unit (17) is arranged to initiate sampling of the milk only after that a certain amount of milk from said animal (3) has passed through at least said part of the passage (8a, 12", 13).
- 25 19. A device according to any one of the claims 17 or 18, characterised in that the control unit (17) is arranged to control the activation of said flowing means (11, 19).
- 30 20. A device according to any one of the claims 17 to 19, characterised in that the control unit (17) is connected to a reading device (7) and arranged to receive information from the reading device (7) about the identity of the animal (3).
- 35 21. A device according to any one of the preceding claims 17 to 20, characterised in that the control unit (17) is connected to a flow meter (16) and arranged to receive information from the

flow meter (16) about the presence of a milk flow in the milk line (1).

5 22. A device according to any one of the preceding claims 17 to 21, characterised in that the control unit (17) is connected to the analysing device (14) and arranged to receive information from the analysing device (14) about the results of the milk samples.

10 23. A device according to any one of the preceding claims 3 to 22, characterised in that the conduit loop (8) has a smaller inner cross-section area than the milk line (1).

15 24. A device according to any one of the preceding claims, characterised in that the device is connected to a milk line (1), which is arranged to transport milk from one teat of an animal (3) at a time.

20 25. A device according to any one of the preceding claims, characterised in that the device is connected to a milk line (1), which constitutes a part of an automatically controlled arrangement for milking of animals.

25 26. A device according to claim 25, characterised in that the arrangement comprises a milking robot (21).

27. A milking robot comprising a device according to any one of the preceding claims, characterised in that the device constitutes an integrated part of the milking robot.

30 28. A method for sampling of milk from an animal, the milk of which is to be tested, wherein a device is used comprising a collecting member (15, 15') arranged to receive milk samples from a milk line (1), which is arranged to transport milk from one animal (3) at a time, and a passage (8a, 12'', 13) arranged to
35 allow a milk flow from the milk line (1) to the collecting member (15, 15'), characterised by the step of:

providing a milk flow from said animal through at least a part of the passage (8a, 12", 13) at least a time period before a milk sample is taken in order to rinse at least said part of the passage (8a, 12", 13) from milk residues from a previously milked animal.

29. Use of a device according to any one of the claims 1-26 in an arrangement for milking of animals.

30. A milking robot, wherein the milking robot (21) comprises a device (6) for sampling of milk from an animal the milk of which is to be tested, a collecting member (15, 15') arranged to receive milk samples from a milk line (1), which is arranged to transport milk from one animal (3) at a time, a passage (8a, 12", 13) arranged to allow a milk flow from the milk line (1) to the collecting member (15, 15'), and an analysing device (14) arranged to count somatic cells and/or fat droplets in the milk sample, characterised in that the milking robot (21) comprises flow means (11, 19) arranged to provide a milk flow, from said animal (3), through at least a part of the passage (8a, 12", 13) at least a time period before a milk sample is taken in order to rinse at least said part of the passage (8a, 12", 13) from milk residues from a previously milked animal.